

## **SoundOFF! Article - Elementary school safe from methane gas**

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Samples taken from inside Manor View Elementary School at Fort Meade shows only trace amounts of methane gas at levels normal for human activity, according to the installation's Environmental Management Office (EMO).

"Results of our investigation in the school show only very low levels of methane and other common indoor contaminants," said Michael "Mick" Butler, EMO chief. "Our conclusion is that the school operate as designed. There is no need for concern for risk for the children."

Butler and geologist Wayne Ballard, a task leader with URS Corp., an environmental consulting contractor, presented the results May 4 at a parents meeting at Manor View. Nearly 20 people attended.

"I'm glad I came," said Petty Officer 1st Class Scott Kinley, father of two Manor View students. "I am impressed by all the information they gave us. It was helpful to see all the numbers of safe levels. I'm not concerned."

The preliminary results have been sent to the Maryland Department of the Environment and the Environmental Protection Agency, which will rule on the findings. The Army Corps of Engineers is helping to manage the project.

Soil gas samples were taken after methane gas was detected in December in a former dumpsite adjacent to the Potomac Place Housing Area and southwest of the school.

The 60-year-old dumpsite was discovered while trees were being cleared by Picerne Military Housing, which had leased the area for new home construction. The site was identified as an old landfill.

In accordance with regulatory agencies, investigations were required to evaluate groundwater and soil gas conditions. Initial testing, before house construction, concluded there was no methane in the area. Later samples were taken with a probe placed 2-to-5 feet into the ground to extract air from the soil. Preliminary data on air samples extracted from the soil revealed that some exceeded the lower explosive limit of methane at 2-to-5 feet in the ground and 30-to-40 feet off the back of homes.

Methane, which tends to rise, is no threat outdoors where it can dissipate into the air. "If there is an ignition source, methane gas in a confined space can be explosive," Butler said.

The school and surrounding residential housing were immediately checked for methane, which was not detected. For safety reasons however, methane detectors were installed to monitor daily the indoor methane levels.

Soil gas samples also were taken from under the school's concrete slab and measured under the crawl space. The samples determined that methane gas is not elevated in the sub-slab or indoor air.

Those results were presented at the meeting in which Ballard and Butler displayed graphs of the school's layout and locations where samples were taken.

"The reason we are here is the possibility of vapor intrusion," Ballard said. "If you have contaminated soil and groundwater, vapors can migrate inside. The chemicals could have been high enough to leak into the school. But the bottom line is the school is still operating because we don't think what is happening outside is inside."

The levels of methane gas were measured in parts per million (PPM), while chemicals were measured in parts per billion (PPB).

"All were very low," Ballard said. "Soil gas levels are not making its way up the concrete. That's a really good sign. Our conclusion is that the building slab foundation is acting as an effective barrier to vapor intrusion."

The gas level detected in the air under the crawlspace also is low, said Ballard. "Concentrations dropped off because it's underneath the dirt," he said. "Even there the levels are not a concern."

Nor did indoor contaminant levels exceed acceptable "health-based levels" of "what is typical for indoor air," Ballard said.

The study compared contaminant levels to a control school, Bodkin Elementary, an Anne Arundel County school with a similar floor plan and population.

Sources of indoor air contaminants include building materials that release chemical byproducts into the air such as carpeting, paints and cleansers.

"So you typically find high levels inside," Ballard said. "The risk of the problem depends on the level and length of exposure and how toxic the chemical is - the Threshold Limit Value. But nothing is over. That is why the school is still open."

The next step, said Butler, is determining whether the air in the playground is safe. The playground has been found to have been built over top of some of the buried debris and has been fenced off from students since December.

Samples will be taken outside the school to measure ambient, or outdoor, air. Canisters will be placed in and around the playground to determine if soil gases are coming up through the surface and into the atmosphere.

Results will be sent to the Anne Arundel County school district officials, who have the "final call on opening the playground," Butler said.

Soil gas surveys of the dumpsite and neighborhood also will be taken. Devices will be placed 3-to-5 feet below ground to extract samples. "We will map and plot where the subsurface gas has gone ... to determine if anything is migrating through," Ballard said.

The expected final step is to install a vapor extraction system that will draw back vapors toward the dump site and keep them from possibly migrating into the school and homes. Plans include collecting field data to design a vapor extraction system on an adjacent property to capture vapors and draw them away.

Slotted pipes would be placed horizontally in a trench and connected to where the gases are emanating. The pipes will draw the gases into a centralized location so they can be "vented into the atmosphere or destroyed or trucked away," Butler said.

A feasibility study also consider other alternatives, said Butler, with the goal of determining the "most effective remedy" to keep vapors from migrating towards the school and homes.

For more information, call the Fort Meade Environmental Management Office (EMO) at 301-677-9648.